

the Musepaper

THE MUSES support and promote the California Science Center Foundation and its education programs for youth.

Go for Payload

THE MUSES and their guests attended the Science Center's special showing of Space Shuttle *Endeavour's* Go for Payload Event the evening of October 9, 2014.

This was the first time the payload bay doors of an orbiter have been opened anywhere except at the Kennedy Space Center or the Palmdale assembly facility. The doors are made of very lightweight composite material and are not designed to be operated under Earth's gravitational influence. As a result, it requires specific equipment and procedures to operate safely. This was also the last time a payload is installed in a space shuttle.



Endeavour with Payload Bay Doors Open



Patti McGovern, Cheryl Craft



Genevieve McSweeney

MUSES Take Special Tour of Pompeii Exhibit

THE MUSES and their guests were hosted on a tour of *Pompeii: The Exhibition*, in November by Diane Perlov, Sr. Vice President for Exhibits at the California Science Center.

The exhibit, which has been extended through January, 2015, features over 150 precious artifacts on loan from the Naples National Archaeological Museum in Italy, including wall-sized frescoes, marble and bronze sculptures, jewelry, ancient Roman coins and full body casts of the volcano's victims.



Pompeii Artifacts

THE MUSES Vision

“To support, encourage and inspire positive experiences in science education for all children.”

Committed to a partnership with the California Science Center Foundation, THE MUSES provide financial support and volunteer involvement for these student educational programs: California State Science Fair, Community Youth Programs and Hands-On Science Camp.



Stacey Joya



Adbullah Ranique, Ryan Cordova

For these kids the sky is no limit, and it all starts at the California Science Center

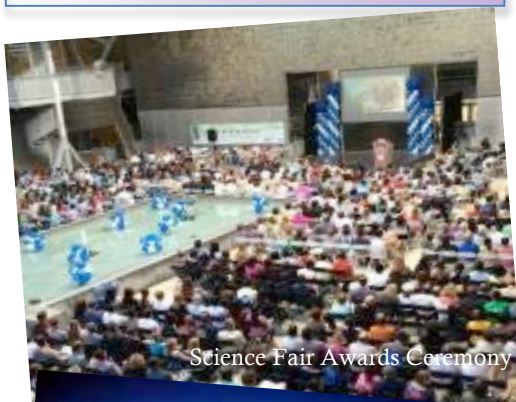
2015 California State Science Fair

The California Science Center will host the 64th Annual California State Science Fair (CSSF) on Monday, May 18 and Tuesday, May 19, 2015. Nearly 1,000 participants from 400 schools throughout the state will compete for awards totaling \$50,000.

Dr. Randy Schekman, recipient of the 2013 Nobel Prize in Physiology or Medicine, will be the keynote speaker. Dr. Schekman was a self-confessed science fair junkie in high school. Participating in the California State Science Fair several times, his best showing was fifth place in the Biology Division in 1966. His subsequent stellar achievements should be an inspiration to students.

**Save the Date
May 18 & 19, 2015**

The California State Science Fair recognizes achievements of middle and high school students who have competed at county and regional science fairs to qualify for this statewide competition. THE MUSES volunteer at the Fair.



Science Fair Awards Ceremony



The California Science Center



Science Fair Student Projects





Christine Hessler, Marcia Goldfarb, Barbara Yahn, Soni Wright, Patricia Torres, Dorothy McVann, Elaine Bauer, Diane Siegel, Mary Lou Huntley, Sunny Boyd, Joyce Cramsie

Marlene Daniels, Louise Peebles, Patti McGovern, Beverly Schwartz



Patti McGovern, Chaka Jaliwa

MUSES Annual Meeting May 14, 2014 Speaker Chaka Jaliwa's Success Reminded Us Why Our Mission Is So Important

Our speaker at the Annual Meeting, held at Annandale Golf Club, was California Science Center Foundation staff member Chaka Jaliwa. As a youth from the local neighborhood, Chaka remembers visiting the California Science Center when it was the Museum of Science and Industry, where its electricity exhibits sparked his love of science.

At the age of 14, Chaka was awarded an internship with the Science Center's Community Youth Programs, which kindled his interest in science learning and fostered his love of teaching. After interning throughout high school, he matriculated to Yale University, where he earned a degree in electrical engineering.

During his tenure with the Science Center, Chaka has worked as an intern and camp instructor and is currently the full-time Outreach Coordinator for the Science Center's Education Department, responsible for coordinating and delivering fun, interactive science-rich programming that takes the excitement of Science Center learning opportunities to schools and communities.

He credits much of his success to his formative experiences at the California Science Center. "My parents pushed me to excel in all things I did and that was a blessing on its own. However, having a chance to work at the California Science Center the same year I started high school, gave me tools that I knew none of my peers would have. In addition to valued life skills, such as organizational skills, time management and teamwork, the ability I've gained to cultivate curiosity in myself and in others has influenced my life and has led me back to the California Science Center many times.

It's something I believe many of the teens that work here will leave with. They ask questions, make connections and know how to learn! They also learn how to teach and pass that knowledge on to others. As the Outreach Coordinator for the Education Department, I enjoy experiencing those moments of sudden realization about how something works and love seeing the expression on a child's face when they have them too. Igniting the power of curiosity will make the world better for everyone."



President Obama meets
Broadcom Masters Winners

Broadcom Masters Competition

We are proud to announce that the two top awards in the Broadcom MASTERS Competition were won by California State Science Fair finalists. Although only 16 of the 30 finalists in the competition won awards, **all seven 2014 CSSF participants** are award winners! California had the greatest number of finalists of any state in the country.

Broadcom MASTERS (Math, Applied Science, Technology and Engineering Rising Stars), is the premier middle school science and engineering fair competition in the U.S.

The top 30 middle school scientists from around the nation were given an all-expense paid trip to Washington, D.C. to compete in the competition from October 24 to 28, 2014. Finalists presented their research projects and competed in team hands-on STEM challenges. They competed for a share of over \$100,000 in prizes. More information is available on the web site: www.usc.edu/CSSF.

Curator Kids Club 2014 Academic Year Program

First Session

During the Saturday Year Round program, the Curator Kids Club explored the "Design Zone" traveling exhibit, which underscored the importance of mathematical thinking and the creative processes of art, music and engineering. Students explored careers in math and science as well.

Curator Kids Club February Open House

The program included project-based presentations on designing and building their exhibits with parents and MUSES in attendance.

Second Session

The second session theme was "Science in Exposition Park," which focused on local plants and animals and how they survive. Student groups chose specific species they wanted to learn about, then came up with a question and planned an investigation.

Curator Kids Club April Open House

Critical thinking, collaboration and public speaking skills were presented to their families and to THE MUSES.



Miguel Landeros, Robert Marroquin, Sebastian Rico, Brisa Rivas, Joshua Rodriguez



Enrique Arista, Daniel Mota

Astronauts in Training at Hands-On-Science Camp



More Ways We Inspire Science Learning in Everyone

Curator Kids Club Summer 2014

Exploring Nanoscale Science

One hundred Curator Kids Club members and the six senior interns spent the summer studying nanoscale science and technology and its current and potential impact on society.

A grant from the Nanoscale Informal Science Education Network allowed the staff to work with the UCLA Center for the Environmental Implications of Nanotechnology to create hands-on activities and experiments.

Some highlights were the opportunity to speak via Skype with a researcher in Switzerland about her current work in nanoscience and a field trip to the Hyperion Water Treatment Plant. Exciting in-class



Israel Natareno

activities included using microbiology techniques to culture *E. coli* bacteria in the classroom and test the antibacterial properties of nanosilver, as well as a waterproofing materials lab and an oil spill cleanup lab.

Curator Kids Club Open Houses - July 11 & 31

Students were challenged to create and market a new consumer product using their knowledge of nanotechnology and to create a presentation to families, staff and THE MUSES.

They came up with some incredibly creative ideas, including an anti-microbial toilet, a pool-cleaning ball, and various waterproof items.

Achieving Our Vision!

Ten years of studies by Dr. John Falk, renowned researcher in museum and science education, indicate the California Science Center has a profound impact on people living in greater Los Angeles. Key findings include: Adults believed that the Science Center created opportunities for them to speak with their children about science, and that it gave their children opportunities in life not supported by other organizations or institutions in their community. This perception of value was particularly strong among lower income and minority adults in L.A. Additionally, 79% of adults believed that experiences at the California Science Center enhanced their child's chances of future success in life.





Back: Jeremy Saborio, Jocelyn Ramirez, Sara Mendez, Aaron Curiel, Brie Fant, James Villegas, Katy Mendivil
Front: Brian Williams, Brisa Rivas, Alexei Acosta

Community Teen Program

Senior Teen Interns

In addition to their work with the Curator Kids Club, the six senior Community Teen Interns participate in several life skills sessions to prepare them for college and the workforce. In the fall session, an online career self-assessment provided the interns a systematic method of gathering information to help them make informed academic and career decisions based on their interests and personality traits.

The interns also learned about the FAFSA (Free Application for Federal Student Aid) and the types of funding that are offered, plus the College Board's Big Future website, which provides students, parents and educators with information about colleges, majors, financial aid and many other tools to help assist with future planning.

Interview Workshop

The annual MUSES Interview Workshop was held in the Spring. This session has been extremely beneficial to the interns throughout the years. They not only are interviewed themselves, but they have the opportunity to observe their co-workers being interviewed as well.

The accompanying resume-building workshop helps the interns write a resume, review, critique and revise. The interns also practiced writing cover letters for their resume and writing thank you letters to THE MUSES for their help with the Interview Workshop.

THE MUSES who participated in the Workshop were Christine Hessler, Curt Hessler, Sharon Laine,

Patti McGovern, Bill Schwartz, Adele Teller, Harold Tomin and Barbara Yahn.

Sophomore and Junior Interns

The sophomore and junior Community Teen Interns spent the fall session learning the basics of their jobs. The interns familiarized themselves with the Science Center and participated in a Communication and Presentation Skills workshop on December 7 taught by Yolanda Kirk, a USC Business Communications professor.

After the teens felt comfortable with their material, they began working on the Science Center exhibit galleries every Saturday. They were primary presenters for three stations: *Curator's Lab*, which allows guests to learn about plankton and food webs, *Slime Bar*, where guests learn about chemical reactions and polymers, and finally, *Rocky Shore Touch Tank*, which allows guests to learn about intertidal rocky shores by touching animals.

Once interns mastered these "core" stations, they began to learn and deliver other demonstrations which fit their personal interests, such as the *Air Pressure Cart*, where guests learn about the properties of air, and the *Heart Cart*, where visitors learn about the structure of the circulatory system, blood and cardiovascular disease.

College Visits

In addition to their presentation work, sophomores and juniors went on two college trips. The first was to UCLA, where participants enjoyed exploring the campus via a guided tour, which included all major science buildings on campus.

The second college was California Institute of Technology (Caltech), where the interns enjoyed a guided tour, which included the dormitories and great stories of the type of campus culture. The interns were joined by a Science Center volunteer and a recent Caltech alumnus. Many interns took advantage of this opportunity to network and gain perspectives on attending Caltech and on becoming a successful engineer.

These interns also attended a free SAT/ACT Test Preparation course on February 15 and 22 provided by Kaplan Test Prep and hosted by the California Science Center.

Sophomore Interns' College Preparation

The sophomore interns began preparing themselves for furthering their education beyond high school. Interns explored the four systems of higher education in California, evaluating colleges to identify best fits for them as they continue their high school studies. The interns then examined their transcripts and prepared plans to meet requirements for the desired universities.

Junior Interns Life Skills Preparation

The six junior interns served as mentors to the sophomores. To better prepare them for this role, the

juniors went through a leadership training unit, which included topics such as communication, recognizing others' accomplishments, envisioning and inspiring others to reach goals. Additionally, to prepare them for life beyond our teen programs, the juniors learned about the process of applying to college and received coaching on writing personal statements.

Heart of Los Angeles

As a way to transition these junior interns into their potential roles as seniors with the Curator Kids Club, the California Science Center worked with Heart of Los Angeles (HOLA) to deliver science programming to 23 children between the ages of 8 and 11.

The topic of this program was engineering. The senior interns developed sub-topics, attended and spoke at a meeting for students' parents, and delivered four 1½ - hour classes at HOLA, located in the Rampart District.

These interns then hosted students for large-scale experimentation in the California Science Center's Big Lab. The final activity of this program was a Family Day, where the students and their families were able to share experiences with one another. This was the third year of a three-year project.

Astronaut Vance Brand Visits Science Center

This summer Science Center volunteers had a special opportunity to ask Vance Brand about an astronaut's personal experiences in space. Vance Brand was launched on his first space flight on July 15, 1975, as Apollo command module pilot on the Apollo-Soyuz Test Program mission. This flight resulted in the historic meeting in space between American astronauts and Soviet cosmonauts.

Some of the questions he was asked: **What was it like to communicate with the cosmonauts in Russian?** Vance Brand: Of course, we both had language lessons and the astronauts studied Russian vigorously. So when we were in space, we spoke Russian and they spoke English. You ask why, because it was fun for both of us to practice.

What is it like to sit on top of a rocket about to explode into space? VB: It's exciting! We've been trained and trained on stimulators so at the time of lift off, everyone is really excited that finally we're at lift off. We're really excited when the countdown is two minutes. It means it's a launch.

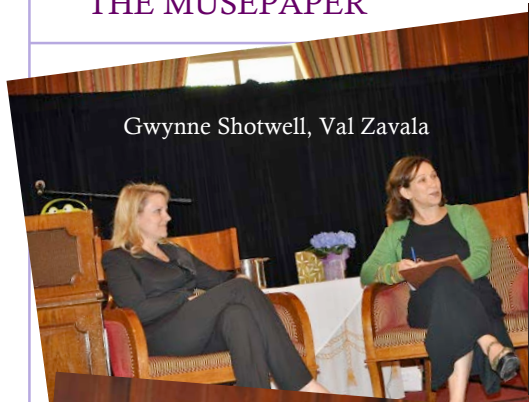
What was your most exciting moment in space? VB: The astronauts' untethered extravehicular activities in 1984. We watched them really closely because we didn't want to explain why we lost one of them.



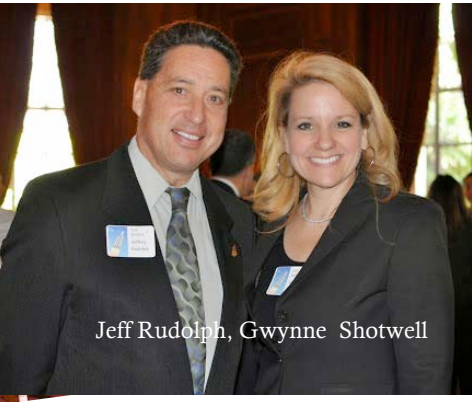
Delores Kerr, Vance Brand, Patti McGovern, Diane Perlov



Gwynne Shotwell, Val Zavala



Jeff Rudolph, Gwynne Shotwell

Cheryl Craft, Andrea Donnellan,
Carlotta Glackin

Mercy Holiday, Natalie Stein

Christine Hessler, Val Zavala, Elaine Bauer,
Curtis Hessler, Sue HolleyGretchen Bazela, Chaka Jaliwa,
Dorothy Fuller, Marcia Goldfarb

Shawna Cullinan, Jennifer Bauer



Patti McGovern, Lee Cass



Gwynne Shotwell



THE MUSES Honor Gwynne Shotwell 2014 Woman of the Year

For over 50 years, THE MUSES has recognized outstanding women from the fields of Science, Technology, Engineering and Mathematics (STEM). This year we were thrilled to honor Gwynne Shotwell of Space Exploration Technologies (SpaceX).

As President and COO, Gwynne is responsible for day-to-day operations and for managing all customer and strategic relations to support company growth. She joined SpaceX in 2002 as Vice President of Business Development and built the Falcon vehicle family manifest to more than 50 launches, representing nearly \$5 billion in revenue. She is also a member of the SpaceX Board of Directors.

In addition to her responsibilities at SpaceX, she participates in a variety of STEM related programs, including the Frank J. Redd Student Scholarship Competition. Under her leadership the committee raised more than \$350,000 in scholarships in six years. Ms. Shotwell was named winner of the 2011 World Technology Award for Individual Achievement in Space and in June 2012 was inducted into the Women in Technology International Hall of Fame. She is a member of the World Economic Forum's Global Agenda Council on Space Security and serves as an advisor for the Art and Technology incubator at the Los Angeles County Museum of Art (LACMA).



Lupe Boyd, Sunny Boyd, Sharon Laine, Kendra Nitta



Harold Tomin, Ed Cramsie



Beverly, Bill Schwartz

MUSES Celebrate Another Successful Woman of the Year Fundraising Event

This year's Woman of the Year Fundraising Event held at The California Club was our most successful. We thank the Committee led by Elaine Bauer for a job well done. Thanks also to the California Science Center staff including Alyson Goodall, Shell Amega, Gretchen Bazela and Chaka Jaliwa.

These members of the Woman of the Year Committee worked tirelessly to ensure success: Bob Bauer, Sunny Boyd, Lupe Boyd, Judith Brandlin, Joyce Cramsie, Carmen Farmer, Marcia Goldfarb, DeAnne Hayes, Audrey Hill, Dottie Juett, Mira Karlovac, Neven Karlovac, Patti McGovern, Dorothy McVann, Margo O'Connell, Louise Peebles, Beverly Schwartz, Bill Schwartz, Patricia Torres, Sherry Tunnell and Soni Wright.

Special thanks again this year goes to Val Zavala, Vice President of News and Public Affairs at Public Television's KCET and THE MUSES 2013 Woman of the Year, for once again being our program moderator who always asks the right question at the right time. Gwynne and Val were a great team and put on a wonderful program.

We look forward to seeing you at next year's Woman of the Year Fundraising Event.



Elaine Bauer, Molly Coulson, Soni Wright



Diane Siegel, Joan Coggin, Marlene Daniels



Patti McGovern, Mary Clair Mira, Sherry Tunnell



Cindy Lee Smet with California Science Center Kids



Gwynne Shotwell, Katy Mendivil, Brisa Rivas with Students



Dr. Phyllis Monroe, Kay Magee, Pamela Reis

The President's Message

Dear MUSES, friends and supporters,

In a ten-year study by Dr. James Falk, renowned researcher in museum and educational learning, it was found that 79% of parents interviewed felt that the experiences at the Science Center enhanced their children's future success in life.

The Science Center programs increase interest in the STEM (Science, Technology, Engineering, Mathematics) disciplines as well as help students develop critical thinking and problem solving skills that will last a lifetime. How does this happen? Perhaps because the educational program sessions are designed to draw on children's natural curiosity and their sense of fun. These elements are incorporated with basic scientific inquiry: asking questions, making observations, experimenting, discovering and presenting a conclusion.

An important part of the Community Youth Programs is a celebration of success at the end of the session with students, parents, friends and yes, THE MUSES. Although not all students are destined to become astronauts or scientists, they will become citizens of their community. Development of problem solving and critical thinking skills provide a strong foundation for achievement throughout all areas of life whether it's one's family, career or neighborhood.

The real story is told best by the students themselves. I invite you to view the informative video on our webpage. It gives a snapshot of the educational programs that THE MUSES support at: (<http://californiasciencecenter.org/support/volunteer/the-muses>)

The holidays are a time to reflect, be thankful and acknowledge people doing everyday extraordinary things. It's a privilege to be part of THE MUSES who dedicate themselves to taking action and helping to create a better tomorrow.

Warmest regards and best wishes for the holiday season and 2015!

Patti McGovern,
President



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THE MUSES

of the California Science Center Foundation



Abdullah Rafique, Ryan Cordova

IRA Charitable Rollover

A Way to Help the California Science Center Education Programs through THE MUSES

Definition

The IRA Charitable Rollover provision allows individuals who have reached age 70 ½ to donate up to \$100,000 to charitable organizations from their Individual Retirement Account (IRA), without treating the distribution as taxable income. Distributions must be made directly from the IRA trustee payable to the qualified charity.

Background

Taxpayers age 70½ and older are required to make annual distributions from their IRAs, which are then included in the taxpayers' adjusted gross income and are subject to taxes. However, the IRA Charitable Rollover permits those taxpayers to make donations directly to charitable organizations from their IRAs without counting them as part of their adjusted gross income and consequently, no taxes are paid on them.

The IRA Charitable Rollover was first enacted in 2006. Although the provision expired in 2008, it has been reinstated each year, most recently as part of the American Taxpayer Relief Act of 2012. However, the provision expired on December 31, 2013.

Although there is pending legislation to reinstate the IRA Charitable Rollover again for 2014, there has not been clarification as of this writing. Please consult your accountant for your best advice.

THE MUSES is part of the California Science Center Foundation, a 501 (c) (3) organization
Federal Tax I.D. No. 95-2210527

Your Options for Contributions

If you are considering a donation to THE MUSES from your IRA, request your IRA administrator to make the donation directly to THE MUSES on your behalf rather than taking the distribution personally and then making a donation.

- If the IRA Charitable Rollover provision is ultimately reinstated and made retroactive for the year 2014 (as the pending legislation suggests), the distribution from your IRA to THE MUSES would not be included in your gross income for 2014.
- In the event the IRA Charitable Rollover provision is not reinstated for 2014, any distribution from the IRA directly to THE MUSES would be treated as income for you for federal income tax purposes. However, it is tax deductible as a charitable donation.
- Alternatively, you may also wish to simply defer action as the law in this area may become clearer in the remainder of 2014.





Blasting off into 2015 and beyond!

Save the Date for These 2015 Coming Events

- ✓ January 31, 2015 – Community Youth Programs Celebration at the Wallis Annenberg Building of the California Science Center
- ✓ Feb 10, 2015 – MUSES Guided Tour of Space Exploration Technologies (SpaceX) and Lunch at Eureka Restaurant
- ✓ March 7, 2015 – California Science Center's 17th Annual Discovery Ball
- ✓ Spring Date and location will be announced soon for THE MUSES Annual Woman of the Year Event
- ✓ April 11, 2015 – Community Youth Programs Celebration at the Wallis Annenberg Building of the California Science Center
- ✓ May 18 and 19, 2015 – The 64th Annual California State Science Fair at the California Science Center

THE MUSES of the California
Science Center Foundation
16684 Huerta Road
Encino, CA 91436